

Amendment After Allowance under 37 CFR 1.312
Date filed September 3, 2007
U.S. Patent Application Serial No. 10/645,853

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously Presented): An operating device for controlling a signal, comprising:

- a rotatable operation unit;
- a detecting section that detects the rotation of the operation unit;
- a base section that rotatably supports the operation unit;
- a shaft provided on the base section, the shaft being arranged in a direction aligned with the radial direction of the operation unit; and
- a plurality of rollers rotatably supported by the shaft, the rollers being in contact with a (bottom) side of the operation unit to support the operation unit.

Claim 2 (Previously Presented): The operating device according to claim 1, wherein each of the rollers has an elastic roller part, which contacts the circumferential edge of the operation unit.

Claim 3 (Previously Presented): The operating device according to claim 1, wherein the rollers are disposed on the base section via an elastically deformable elastic member, the operation unit moving up and down in a direction orthogonal to a rotary plane of the operation unit.

Claim 4 (Previously Presented): The operating device according to claim 1, wherein the base section has a plurality of guide pins which protrude toward the operation unit, the operation unit has a guide groove which is made in a surface opposing the base section, and the guide pins are slidably inserted in the guide groove to slide within the guide groove.

Claim 5 (Previously Presented): The operating device according to claim 3, wherein the base section has a plurality of guide pins which protrude toward the top plate of the operation unit, the top plate has a guide groove which is made in a surface opposing the base section and which extends in the circumferential direction of the operation unit, and the guide pins are slidably inserted in the guide groove to slide within the guide groove.

Claim 6 (Previously Presented): The operating device according to claim 5, wherein said plurality of guide pins are positioned at substantially the same distance from the center of the top plate of the operation section unit.

Claim 7 (Previously Presented): The operating device according to claim 5, wherein each of the guide pins comprises a shaft and a guide roller, which is rotatably mounted on the shaft.

Claim 8 (Previously Presented): The operating device according to claim 3, wherein the top plate has a pair of annular guide ribs which are concentric to the top plate, have different diameters and define the guide groove.

Claim 9 (Previously Presented): The operating device according to claim 8, wherein the operation unit has a first gear provided on a circumferential surface of one of the pair of guide ribs and the detecting section is arranged on the base section and comprises a second gear and a rotation-detecting sensor for detecting the rotation of the second gear, the first gear and the second gear being set in mesh with the second gear.

Claim 10 (Previously Presented): The operating device according to claim 3, wherein the operation unit has a first gear on a surface which opposes the base section, the detecting section arranged on the base section which comprising the second gear set in mesh with the first gear and the rotation-detecting sensor for detecting the rotation of the second gear.

Claim 11 (Currently Amended): The ~~switch device~~ operating device according to claim 1, wherein the base section comprising a base part which supports the operation unit, allowing the operation unit to rotate, and a rotational drive section which is provided on the base part to move in a direction intersecting with the direction the operation unit rotates and which supports the rollers supporting the operation unit, allowing the rollers to rotate; and a motion-detecting section is provided to detect the motion of the rotational drive section.

Claim 12 (Previously Presented): The operating device according to claim 1, wherein the base section comprises a base part which supports the operation unit, allowing the operation unit to rotate, and a rotational drive section which is provided on the base part to move in a direction intersecting with the direction the operation unit rotates and which supports the rollers supporting the operation unit, allowing the rollers to rotate; a motion-detecting section is provided to detect the motion of the rotational drive section; the operation unit has the first gear on a surface which opposes the base section; and the detecting section comprises the second gear arranged on the base part set in mesh with the first gear to move in the direction the rotational drive section is moved, and the

rotation-detecting sensor for detecting the rotation of the second gear.

Claim 13 (Previously Presented): The operating device according to claim 11, further comprising an annular cover rotatably supported by the base section and holding the operation unit at the inner circumference, allowing the same to move in axial direction.

Claim 14 (Previously Presented): The operating device according to claim 13, wherein the operation unit has a fastening member, the annular cover has, at the inner circumference, an engagement member which positions the fastening member of the operation unit in a circumferential direction and which is able to move in an axial direction to engage with and disengage from the fastening member of the operation unit.

Claim 15 (Previously Presented): The operating device according to claim 13, wherein the base section comprises a plurality of rollers which support the annular cover, allowing the annular cover to rotate.

Claim 16 (Previously Presented): The operating device according to claim 1, wherein a resistance which the operation unit receives when rotated with respect to the base section is set to be substantially equal to a load which a turntable of a record player receives when rotated.

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Claim 17 (Canceled)

Claim 18 (Canceled)

Claim 19 (Canceled)

Claim 20 (Previously Presented): The operating device according to claim 3, wherein the elastic member is a spring.